







INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Primary Grade 5

Term 1

2022-2023

Student's Book

Introduction

تشهد وزارة التربية والتعليم والتعليم الفني مرحلة فارقة من تاريخ التعليم في مصر، فقد انطلقت إشارة البدء في التغيير الجذري لنظامنا التعليمي بدءًا من مرحلة رياض الأطفال حتى نهاية المرحلة الثانوية (التعليم 2.0). لتبدأ أول ملامح هذا التغيير من سبتمبر 2018 عبر تغيير مناهج مرحلة رياض الأطفال والصف الأول تلاها الصفوف الثاني والثالث والرابع الابتدائي. وفي 2022 بدأنا في تغيير منهج الصف الخامس الابتدائي وسنستمر في التغيير تباعًا للصفوف الدراسية التالية حتى عام 2030، إذ نعمل على إحداث نقلة نوعية في طريقة إعداد طلاب مصر ليكونوا شبابًا ناجحين في مستقبل لا يمكننا التنبؤ بتفاصيله.

وتفخر وزارة التربية والتعليم والتعليم الفني بأن تقدم هذه السلسلة التعليمية الجديدة، فضلًا عن المواد التعليمية الرقمية التي تعكس رؤيتها عن رحلة التطوير. ولقد كان هذا العمل نتاجًا لكثير من الدراسات والمقارنات والتفكير العميق والتعاون مع الكثير من علماء التربية في كل من المؤسسات الوطنية والعالمية لكي نصوغ رؤيتنا في إطار قومي إبداعي ومواد تعليمية ورقية ورقمية فعالة.

وتتقدم وزارة التربية والتعليم والتعليم الفني بكل الشكر والتقدير لمركز تطوير المناهج والمواد التعليمية ومديرته وفريقها الرائع على وجه التحديد، كما تتقدم بالشكر لمستشاري الوزير وكذلك مديري عموم المواد الدراسية، وكذلك تخص بالشكر والعرفان مؤسسة ديسكفري التعليمية، ومؤسسة ناشيونال جيوجرافيك ليرنينج، ومؤسسة نهضة مصر، ومؤسسة لونجمان مصر، ومنظمة اليونيسف، ومنظمة اليونسكو، والبنك الدولي لمساهمتهم في تطوير إطار المناهج الوطنية بمصر، وكذلك أساتذة كليات التربية المصرية لمشاركتهم الفاعلة في إعداد إطار المناهج الوطنية في مصر. وأخيرًا تتقدم الوزارة بالشكر لكل فرد في قطاعات وزارة التربية والتعليم الذين ساهموا في إثراء هذا العمل.

إن تغيير نظامنا التعليمي لم يكن ممكنًا من دون الإيمان العميق لدى القيادة السياسية المصرية بضرورة التغيير، فالإصلاح الشامل للتعليم في مصر هو جزء أصيل من رؤية السيد الرئيس عبد الفتاح السيسي لإعادة بناء المواطن المصري. ولقد تم تفعيل تلك الرؤية بالتنسيق الكامل مع السادة وزراء التعليم العالي والبحث العلمي، والثقافة، والشباب والرياضة. إن نظام التعليم (2.0) هو جزء من مجهود وطني كبير ومتواصل للارتقاء بمصر إلى مصاف الدول المتقدمة لضمان مستقبل عظيم لجميع مواطنيها.

كلمة السيد وزير التربية والتعليم
والتعليم الفني

يسعدني أن أشارككم هذه اللحظة التاريخية في عمر مصرنا الحبيبة والتي تمثل استمرارًا لانطلاقة نظام التعليم المصري الجديد، والذي تم تصميمه لبناء إنسان مصري منتمٍ إلى وطنه وإلى أمته العربية وقارته الإفريقية، مبتكر، ومبدع، يفهم ويتقبل الاختلاف، ومتمكن من المعرفة والمهارات الحياتية، وقادر على التعلم مدى الحياة وقادر على المنافسة العالمية.

لقد آثرت الدولة المصرية أن تستثمر في أبنائها عن طريق بناء نظام تعليم عصري بمقاييس جودة عالمية، من أجل أن ينعم أبناؤنا وأحفادنا بمستقبل أفضل، وكي ينقلوا وطنهم "مصر" إلى مصاف الدول الكبرى في المستقبل القريب.

إن تحقيق الحلم المصري في التغيير مسئولية مشتركة بين مؤسسات الدولة أجمعها، وأولياء الأمور والمجتمع المدني والتعليم الخاص ووسائل الإعلام في مصر. وهنا أود أن أخص بالذكر
السادة المعلمين الأجلاء الذين يمثلون القدوة والمثل العليا لأبنائنا، ويقومون بالعمل الدؤوب لإنجاح هذا المشروع القومي.

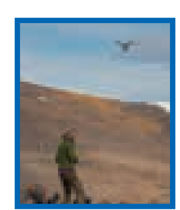
إنني أناشدكم جميعًا أن يعمل كل منا على أن يكون قدوة صالحة لأبنائنا، وأن نتعاون جميعًا لبناء إنسان مصري قادر على استعادة الأمجاد المصرية وبناء الحضارة المصرية الجديدة.

خالص تمنياتي القلبية لأبنائنا بالتوفيق، واحترامي وتقديري لمعلمي مصر الأجلاء.

الأستاذ الدكتور رضا حجازي
وزير التربية والتعليم والتعليم الفني

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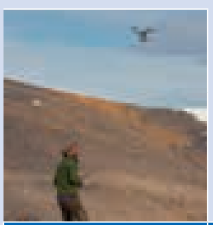
Scope and sequence



THEME 1 Role of Information and Communication Technology (ICT) in our lives

Essential Question: How can we use ICT tools together, even when we're in different places?

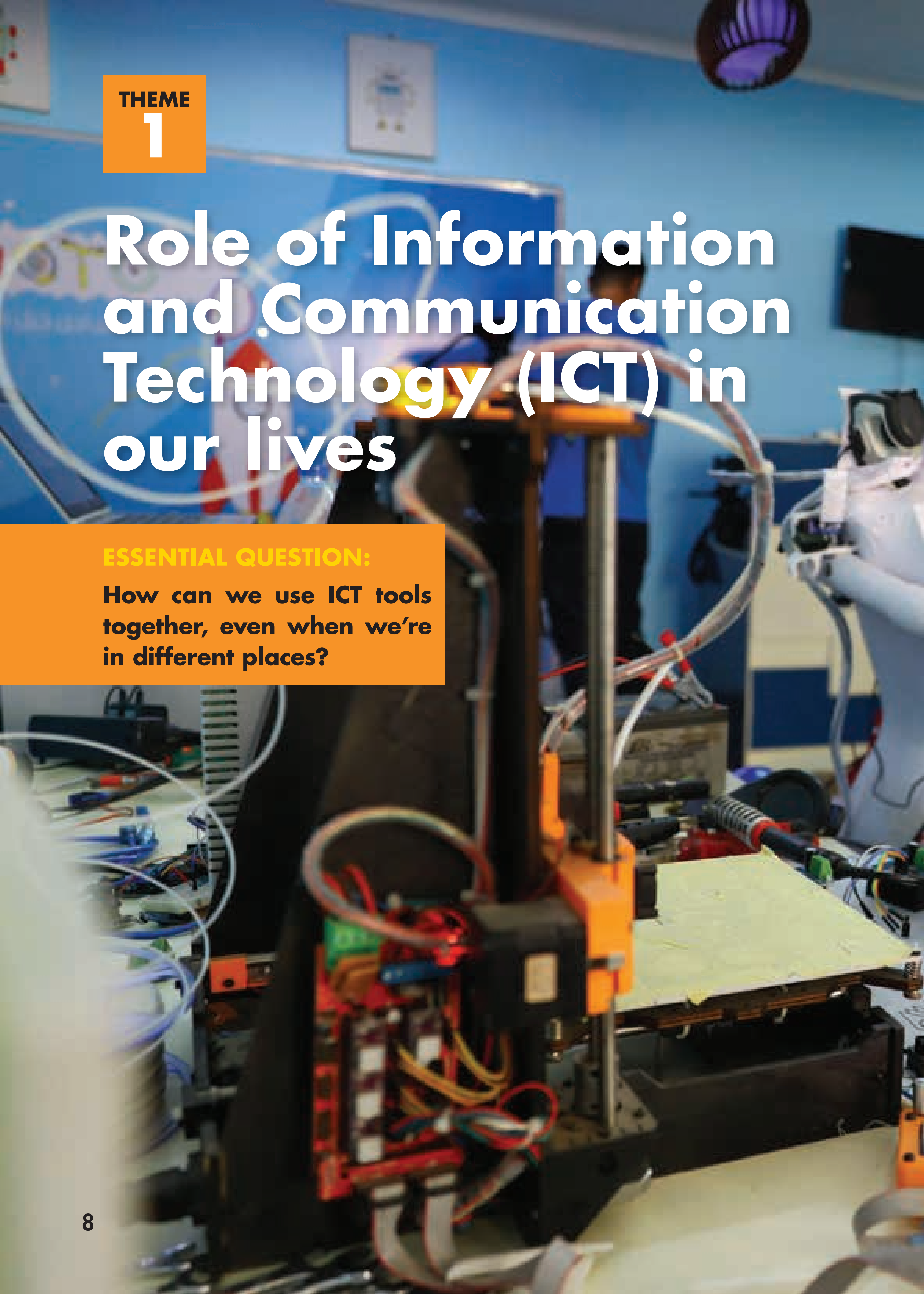
LESSON	TOPICS	SKILLS INTEGRATION		
		Life skills	Values	Issues and challenges
LESSON 1 Explorer in Action	• How archaeologists use ICT to share information • Different ways to record information	Learning to do: decision-making	Academic values: appreciation of technology	Globalization issues: technological awareness
LESSON 2 Computer accessories	• Basic computer hardware concepts • Common computer problems	Learning to do: decision-making	Academic values: perseverance	Globalization issues: technological awareness
LESSON 3 Networks	• Different types of networks • How computer technology has advanced from the 80s to today	Learning to know: critical thinking Learning to live together: communication	Work values: curiosity, appreciation of science and scholars	Globalization issues: technological awareness
LESSON 4 Digital communication tools	• How people communicate using computer networks • Basic scientific concepts relating to ICT tools • How computer networks help people of determination	Learning to live together: communication Learning to be: sharing	Academic values: appreciation of technology Personal values: independence	Globalization issues: digital citizenship, civilizational communication
LESSON 5 Internet connection problems and solutions	• Common ICT issues • How to troubleshoot problems using a process	Learning to do: decision-making Learning to know: problem-solving	Academic values: perseverance	Globalization issues: technological awareness
LESSON 6 Digital file management	• Different device accessories • File systems • How to organize information	Learning to be: self-management Learning to know: creativity	Personal values: independence	Globalization issues: digital citizenship
LESSON 7 Information search strategies	• How to plan effective searches • Using keywords and subtopics	Learning to do: decision making Learning to know: critical thinking	Academic values: curiosity Citizenship values: participate in scholarly research	Globalization issues: digital citizenship, technological awareness
LESSON 8 Sharing information	• Posting information on an intranet / the internet • How to share information on spreadsheets	Learning to live together: communication Learning to do: decision making Learning to know: critical thinking	Work values: perseverance Personal values: independence Citizenship values: participate in scholarly research	Globalization issues: technological awareness



THEME 2 Digital safety and security precautions

Essential Question: How do we keep ourselves and our data safe and secure when using ICT tools?

LESSON	TOPICS	SKILLS INTEGRATION		
		Life skills	Values	Issues and challenges
LESSON 1 Explorer in Action	• Copyright in relation to photographs • Importance of baking up photograph files	**Learning to do:** decision-making	**Academic values:** appreciation of technology	**Globalization issues:** technological awareness
LESSON 2 Protecting ourselves and our information	• Protecting personal information and data • Backing up data	**Learning to be:** communication	**Personal values:** independence	**Citizenship issues:** legal awareness
LESSON 3 Password security	• The importance of password protection • Using multi-factor authentication	**Learning to know:** critical thinking	**Work values:** proficiency	**Globalization issues:** technological awareness
LESSON 4 How to deal with fake websites	• Identifying who can help with problems with websites	**Learning to know:** critical thinking	**Work values:** proficiency	**Citizenship issues:** legal awareness
LESSON 5 Intellectual property rights	• What copyright means • When to attribute a creator's work	**Learning to do:** communication, self-management **Learning to live together:** empathy	**Work values:** respect	**Citizenship issues:** legal awareness **Globalization issues:** digital citizenship
LESSON 6 Using digital sources	• Identifying reliable websites to use as research sources • Using multiple sources	**Learning to do:** decision-making	**Work values:** transparency and integrity	**Globalization issues:** technological awareness
LESSON 7 Advanced searches	• Specific and accurate online search terms • Search engines and advanced searching tools	**Learning to do:** productivity	**Scientific values:** curiosity **Work values:** proficiency, perseverance	**Globalization issues:** civilizational communication
LESSON 8 Dcumenting information appropriately	• Paraphrasing online content • How to quote online content • How to cite online sources	**Learning to do:** decision-making, productivity	**Work values:** proficiency	**Citizenship issues:** legal awareness



THEME 1

Role of Information and Communication Technology (ICT) in our lives

ESSENTIAL QUESTION:

How can we use ICT tools together, even when we're in different places?



SPOTLIGHT on Theme 1

In this theme, you will learn about how different computer networks communicate, how to troubleshoot common computer hardware and software problems, and how to use ICT tools effectively and efficiently. You will also create a spreadsheet to share information that you've found while researching online, making use of what you have learned.



LESSON 1 EXPLORER IN ACTION

Objectives

By the end of the lesson, I will be able to:

- Give examples of how to share information.
- Determine ways to record information.
- Communicate and exchange information with my colleagues through one of the educational platforms.

After the lesson, check the correct box: **I can . . .**

☐ Very well	☐ OK	☐ Need more work
☐ Very well	☐ OK	☐ Need more work
☐ Very well	☐ OK	☐ Need more work

Engage

What ICT tools do you use regularly? How do they help you achieve your different tasks?

Learn

Fred Hiebert is an archaeologist and explorer. He is also the Explorer in Residence for the National Geographic Society. As an archaeologist, he studies the past by excavating, observing, and writing about objects and sites.

In his daily work, Mr. Hiebert uses the Word processor program (Word) to write reports, and the Excel spreadsheet program to prepare and show graphs. When he needs to present the results of his research to his team, he uses the PowerPoint presentation program. He ensures that the slides are easy to read and make the information clear. When he wants to communicate more formally, he uses printed letters and e-mails, or he hands over documents in person.

As part of his role, Mr. Hiebert is also a mentor who guides his students and colleagues around the world. Mentoring is advising or training someone on a subject you have a lot of experience in. Have you ever mentored others? It is a great way to pass on knowledge and skills. Mentors share their experience, including problems that may arise and how to deal with them. This helps others advance faster.



Mr. Hiebert generally prefers to communicate with people through face-to-face, in-person meetings. At times, this is not possible because he is away on an expedition, or the people he is meeting with are in different countries. In such cases, Mr. Hiebert holds virtual meetings using platforms like Zoom and WhatsApp. These meetings have to be scheduled at a time that is suitable for everyone, which can be difficult due to time difference between countries. Mr. Hiebert believes it is important to follow up a virtual meeting or telephone call with official notes documented in an email or sent as a Word document. This ensures that everyone involved has the same information and a copy to keep.



Sharing information has become vital in our day-to-day lives. Technology has helped to make this an easier task. Moreover, the Ministry of Education makes sure that students have a record of what they should have learned in the classroom via the satellite broadcasting channels (educational channels) affiliated by the Ministry of Education and YouTube channel, “Madrasitna”. On the YouTube channel, there are videos on each school subject. This provides a second opportunity for students who missed a lesson, need further explanation of a lesson, or would just like a quick review. “Madrasitna” is an opportunity for students to watch lessons whenever they choose.

Watch the video about Fred Hiebert and his work. What does he do to mentor others? What are the key skills to mentoring others? What ICT tools help him mentor?

Explore

Sometimes technology can be challenging and scheduling calls can be difficult. That is why Mr. Hiebert always has to consider many factors, such as the time difference between countries. In your opinion, what other challenges are there when making online virtual calls? How can you overcome those challenges?

Review

1. List the ways you use ICT tools. What ways might you use them in the future?
2. Why is it important to share information in today’s world?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



EXPLORER IN ACTION

1 Think and answer about me

1. What information you learned today would be useful for others?

2. Why is it important?

3. Where can you record that information?

4. How would you share that information?

2 Research

Watch a video on the “Madrasitna” satellite or YouTube channel. Then answer the questions.

1. What new information have you learned?

2. How will you record this new information?

3. What information might be useful for others?

3 Comprehension

Read, think and answer

Virtual meetings, or video conferencing, provide an effective method to mentor others. During video conferencing, people can see and hear one another. They can also share information found on their screens and even send and receive documents. Virtual meetings became very popular in 2020. Since then, more and more people have used them worldwide.

1. In your opinion, how has video conferencing made it easier for people to mentor others?

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2. How do virtual meetings help people communicate and share knowledge?

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4 Creative planning

Make a plan to mentor someone you would like to train on a topic that you know a lot about.

1. Who will you choose?

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2. What information will you share with them?

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3. Which virtual meeting platform will you use?

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LESSON 2 Computer accessories

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Describe basic computer/accessories concepts.	☐ Very well ☐ OK ☐ Need more work
• Describe common computer problems.	☐ Very well ☐ OK ☐ Need more work
• Explain how to solve some common computer problems.	☐ Very well ☐ OK ☐ Need more work

Engage

What can a computer do? How does the hardware enable it to do these things?

Learn

Like Mr. Hiebert, you can use ICT tools to share ideas. However, your computer's hardware must be working properly. Read about the main computer hardware components and then potential problems/solutions on page 15.



Units of measurement:

bit: the smallest unit of data

byte: 1 byte = 8 bits = 1 character; the word 'cat' has three letters and would need three bytes.

Kilobytes: 1,024 (B)

Megabyte (Mb): 1,024 (KB)

Gigabyte (Gb): 1,024 (MB)

Terabyte: 1,024 (GB)

Mbps: megabits per second; measures the speed of a network or internet connection (the faster the speed, the better)

GHz (GigaHertz): measures the number of cycles your CPU carries out per second; the higher the number, the faster the speed.

Potential computer problems and solutions

Problem: Trouble processing large files, like a big PowerPoint presentation

Potential reason and solution:
Not enough graphics storage – shut down some programs

Problem: A poor video-conference connection

Potential reason and solution:
Slow wireless internet connection – try an ethernet connection

Problem: Not able to store files

Potential reason and solution:
Not enough space – move old files to an external drive

Problem: Home internet connection not working

Potential reason and solution:
connection interrupted – use ethernet or contact ISP

Explore

Work with a partner. Think about a common computer problem. Write it down. Your partner will then ask you questions to guess the problem. With your partner, come up with possible solutions.

Review

1. Your computer is not running properly. What steps would you take to identify the problem? What steps would you take to solve the problem?
2. Someone needs help with computer problems. Give advice.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 2** **Computer accessories**

Comprehension

1 Read and write

Read the scenarios. Suggest solutions.

You need to download multiple large files from the internet.	
You want your computer to hold more data.	
You want to play an online video game with lots of animation.	
You want to use multiple apps at once.	

2 Read, choose, and answer

Which computer accessory would best ensure you have a good connection during a video conference? Explain why you chose it.

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Critical Thinking

3 Think and write

Explain why it's so important for your computer's CPU to run properly. How does a slow or poorly running CPU affect a computer?

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4 Think and discuss

Work with a partner. Take turns in suggesting and solving possible computer problems. One person describes a problem, and the other gives advice about how to resolve it. Then switch roles. Afterward, write notes showing the problems and solutions you discussed.

Problem: ______________________________________

____

Solution: ______________________________________

____

Problem: ______________________________________

____

Solution: ______________________________________

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ICT and Me

5 Think and answer

What computer accessory problems have you encountered at home or at school? Were you able to resolve them? How? If not, do you think you could if faced with the same problem now?

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LESSON 3 Networks

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Explain what a network is.	☐ Very well ☐ OK ☐ Need more work
• Describe different types of networks.	☐ Very well ☐ OK ☐ Need more work
• Explain how far communication via computers and communication devices has advanced from the 1980s to today.	☐ Very well ☐ OK ☐ Need more work

Engage

What does the word **network** mean to you? How many networks, digital or otherwise, do you think you have or you have dealt with?

Learn

Networks are groups of people, or things, that are connected to each other for a common purpose. Think about your family, from your parents to your cousins. It can be thought of as a family network. Together, you form links that create it. You bond and communicate with each other, sharing support and experiences.

Similarly, computer networks connect computers with each other, to share important information and data.

You may have your own personal computer network at home. If you have a computer connected to another computer or device such as a printer or router, then you have your own personal Local Area Network (LAN).

The internet is a network that connects computers, and the people using them, from all around the world. To connect your computer to the internet, you need a gateway, such as a router, which connects your computer to an ISP (Internet Service Provider), such as the internet service provided by Egyptian companies to citizens.



gateway a means of access to something

The World Wide Web (WWW) is part of the internet network, made up of web pages that people can navigate. The Egyptian Knowledge Bank is on the WWW, available for free to all Egyptians who register on the site.

Another type of network is an intranet. An intranet, unlike the internet, is private, restricted to only those that are part of the business, school, or organization that it is connecting.

A school's computer lab could have its own closed computer network. Some networks described above are open and accessible to all. A closed network, such as one in a computer lab, may only have computers linked by cables to allow for file sharing.



cable a long connector that transmits data or power between devices; example: ethernet cable

Explore

Work with a partner. Think about different sports at school. Together, choose one and think about how it can be considered its own network. Make a poster to illustrate and label how it works as a network. Share your poster with the class.

Review

1. Discuss different kinds of networks and their shared characteristics.
2. Talk about a computer network you have at home or at school.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 3** **Networks**

Comprehension

1 Read and answer

Give an example of a network that has been covered in this lesson. Explain what makes it a network. (Remember: a network isn't just computers linked together!)

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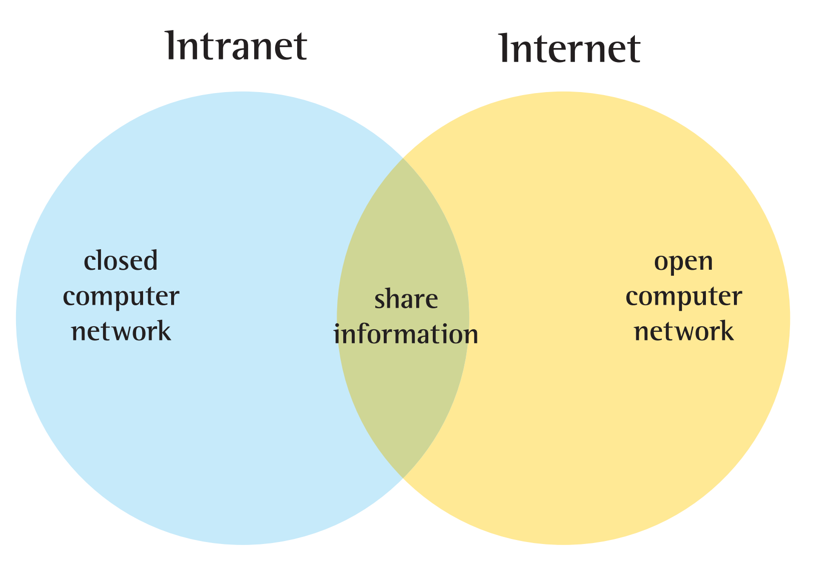
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2 Read, think, and write

Compare and contrast intranet and internet networks. An example is included.



80s
dial-up internet connection

→ used phone line to connect to internet (couldn't use phone when on internet) a slow but stable connection

late 80s
Digital subscriber line (DSL)

→ a high-speed connection that uses the same home phone wires to connect to the internet, allowing the phone and the internet to be used simultaneously

Critical Thinking

3 Look, think, and write

Look at the timeline at the bottom of the page. How do you think the advancements in technology helped people communicate in their everyday lives, both in the past and now?

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ICT and Me

4 Think and answer

Write about a time when you've used a network of any kind to communicate with friends.

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____
____

90s

➔ emergence of the World Wide Web(abbreviated to WWW), which is a large set of web pages that are linked to each other using hyperlinks

2000+

➔ Wi-Fi devices become popular; can now access internet from your smartphone – portable internet service; hotspots to allow you to access the internet anywhere) on smartphone can help provide internet service to other devices you may have as well.

LESSON 4 Digital communication tools

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Describe different ways that people can use computer networks to communicate.	☐ Very well	☐ OK	☐ Need more work
• Explain basic scientific concepts relating to ICT tools.	☐ Very well	☐ OK	☐ Need more work
• Describe how computer networks can help us in our daily lives.	☐ Very well	☐ OK	☐ Need more work

Engage

How do you feel about talking to your friends face to face? How is it different from communicating on the telephone / by email / virtually?

Learn

We communicate using computer networks every day. Every time we use our phone to send a text or buy something, take an online class or download or upload a video, or use an app or program, we' using a computer network. Businesses and organizations use networks every day to share information, some private and in closed networks, and some public, or in open networks.

Household items can be part of a network, too. This is called the "Internet of Things" (IoT). The IoT consists of devices linked to the internet via Wi-Fi. These devices can be controlled, whether you're in the same room or in another city! Examples include Bluetooth speakers to listen to music and home appliances, such as a digital refrigerator and washing machine that can be turned on/off using specific apps.

Bluetooth is a networking technology that connects wireless mobile devices over a short range to form a network to transmit data between different devices.

Computer networks give people of determination more independence, both at home and in public. This independence helps them to save money and time. It also helps to increase confidence levels.

Networks and people of determination

Hatem uses computer networks daily. He listens to music on his Bluetooth speakers. His favorite website is the Egyptian Knowledge Bank because it has a lot of interesting information. His favorite subject is archaeology. One day, he wants to be an explorer like Fred Hiebert!

Hatem also shops online. He thinks e-commerce makes life so much easier for everyone. He always asks his parents before he goes online shopping. His parents remind him to think about digital privacy, so he's extra safe about giving out his information.

Hatem is visually impaired, so he does schoolwork online, using screen readers, for audio feedback, and for help with reading braille. Screen readers helps Hatem do everything he needs to do, including writing papers and accessing documents on his laptop.

Explore

Work in a group. You and three friends want to start a campaign to clean up a local community park. You want to:

- reach out to as many people as possible
- share important information about the campaign
- come up with ways to track tasks and your campaign's progress.

How would you use ICT tools / computer networks to help you with the campaign? Share your ideas with the class.

Review

1. Explain how people in different places use computer networks to communicate.
2. How can computer networks help us in our daily lives? Provide specific examples.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 4 Digital communication tools

Comprehension

1 Read and answer

Give examples of items in your home or classroom that can be described as using the IoT. Explain.

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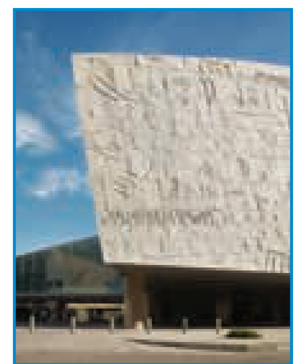
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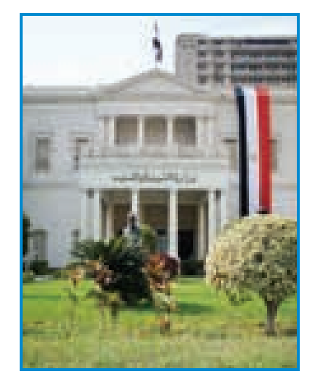
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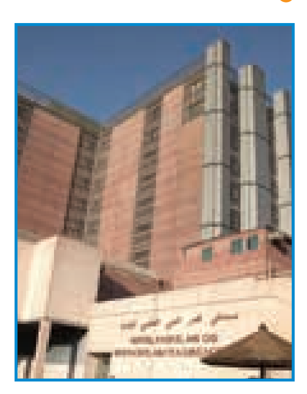
2 Look and answer

What kind of computer networks might be set up in the following places? Explain your choices.









___ ___ ___ ___

3 Read and write

Express the following terms in your own words.

1. internet: ___
2. website: ___
3. e-commerce: ___
4. online shopping: ___

Critical Thinking

4 Think and write

Think of ways you can be sure to use computer networks responsibly. Write a list.

____

____

____

Compare your list with a partner. Does your partner have suggestions that you would like to add to your list? If so, be sure to add them.

Cross-curricular Connections: Career Skills

5 Think and write

It's Career Day at school! Sara is talking about her father's job. Read, and then answer the questions that follow.

> My dad owns his business. He usually works at his office, but sometimes, he works from home. He has a home office that includes a laptop. It links him to his company's intranet. My dad is constantly video conferencing with clients on his laptop. He uses his social media apps on his phone to communicate with clients and other business owners.

1. How do ICT tools help Sara's dad at work as a business owner?

   ____

   ____

2. Think about Mr. Hiebert and how he uses ICT tools to communicate. How do these tools help him at work as an archaeologist?

   ____

   ____

ICT and Me

6 Think and answer

Think about the ICT tools you learned about in this lesson. When did you or when would you use these ICT tools in your own life? What about your family or friends?

____

____

____

LESSON 5 Internet connection problems and solutions

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Describe common ICT issues.	☐ Very well	☐ OK	☐ Need more work
• Come up with solutions to common ICT problems.	☐ Very well	☐ OK	☐ Need more work
• Explain how following a process helps me to troubleshoot problems.	☐ Very well	☐ OK	☐ Need more work

Engage

What issues have you run into with ICT tools? Did you resolve them? If so, how? Did someone help you?

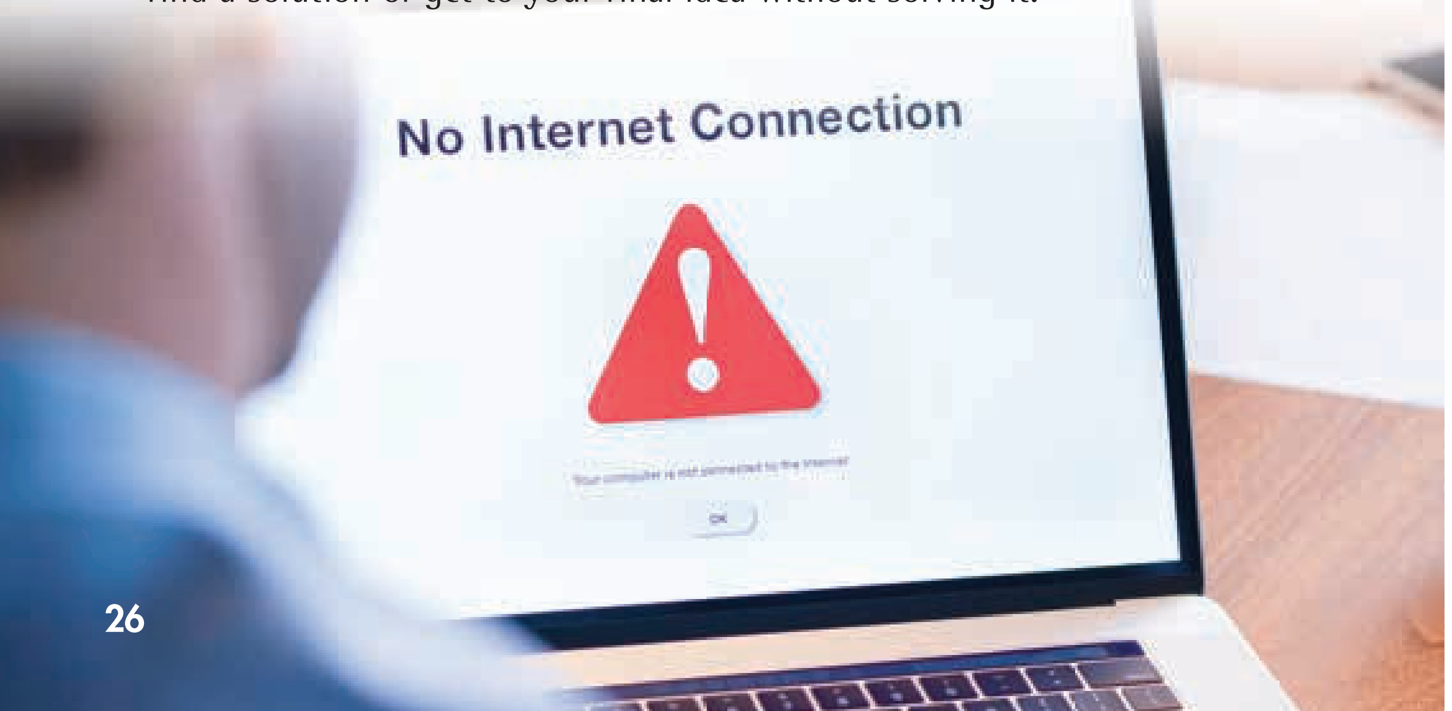
Learn

Fred Hiebert uses Word, Excel, and PowerPoint to make presentations about his discoveries, as well as email and video conferencing to share them with colleagues. While using these programs, he can face many problems related to the device he's using or its software, or to a weak or interrupted internet connection.

Following a process

Follow this troubleshooting process to help with computer problems:

1. Identify the problem. What's the issue? Is it a hardware or software problem? Have you committed an error that causes the problem?
2. Think about and plan different ways you might solve the problem.
3. Go through your potential solutions to the problem. Try each one until you find a solution or get to your final idea without solving it.



4. Which solution worked? If you didn't solve the problem, what did you learn while trying? How can what you learned help you the next time you try to solve a problem?
5. If you do not find a solution to the problem, you should ask your teacher or a member of your family for help.

Following a process when troubleshooting will help you find different ways to solve problems. An idea you came up with that didn't work for a particular problem may work for another.

Common computer problems and possible solutions:

Problem: Computer slows down when opening an app

Possible solutions: Shut down and restart; check for software updates; delete unwanted apps.

Problem: Browser running slow

Possible solutions: Check Wi-Fi signal; make sure to update the apps on your device.

Problem: No internet connection

Possible solutions: Use the software to troubleshoot your Wi-Fi connection; check that the router is connected; restart your router; try a new ethernet cable; contact the customer service of your ISP for help.

Problem: Slow to download

Possible solutions: Restart computer and router; check internet speed

Explore

In groups, discuss the following scenario: Your teacher has asked you to find information on a particular subject, but your internet connection isn't working. What other ways can you find the information you need? Present your ideas to the class.

Review

1. Go back to Lesson 2. Review the possible problems and solutions provided. Come up with a new possible solution to each problem.
2. Discuss using a process to troubleshoot problems. How can following a process help you to become a more educated digital citizen?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 5**

Internet connection problems and solutions

Comprehension

1 Read and answer

List three possible computer problems that you may encounter at school.

____

____

____

2 Think and answer

Provide two solutions to each problem above.

Problem 1: ______________________________

____

Problem 2: ______________________________

____

Problem 3: ______________________________

____

Critical Thinking

3 Look, think, and answer

1. Your cell phone has not been working correctly since a new app was installed. How can it be resolved?

   Problem: ______________________________

   Solution: ______________________________

2. My browser is working very slowly, but I have a good Wi-Fi signal. How can it be resolved?

   Problem: ______________________________

   Solution: ______________________________

3. I have no internet connection on my PC. How can it be resolved?

   Problem: ______________________________

   Solution: ______________________________

Issues and Challenges

4 Read and solve

1. You just downloaded some files from the internet. Suddenly, your computer starts to run slowly. You have an external hard drive with plenty of room, so that's not the problem. You close all the applications that are running, but that doesn't help. You restart your computer, but that doesn't help either. What might be the issue? How can it be resolved? You might need an expert technician to help you.

   ____

   ____

   ____

   ____

2. You want to make an attractive presentation. You immediately begin using Word and then realize you need images, graphs, and tables. What should you do?

   ____

   ____

   ____

   ____

ICT and Me

5 Read and answer

How confident are you when it comes to troubleshooting common ICT problems? How comfortable are you when it comes to asking others for help when you need it? Explain.

____

____

____

____

____

____

____

____

LESSON 6 Digital file management

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Describe different device accessories.	☐ Very well	☐ OK	☐ Need more work
• Describe digital file management.	☐ Very well	☐ OK	☐ Need more work
• Explain how to organize information.	☐ Very well	☐ OK	☐ Need more work

Engage

What is the best way for you to keep your schoolwork, toys, photographs, and clothes organized?

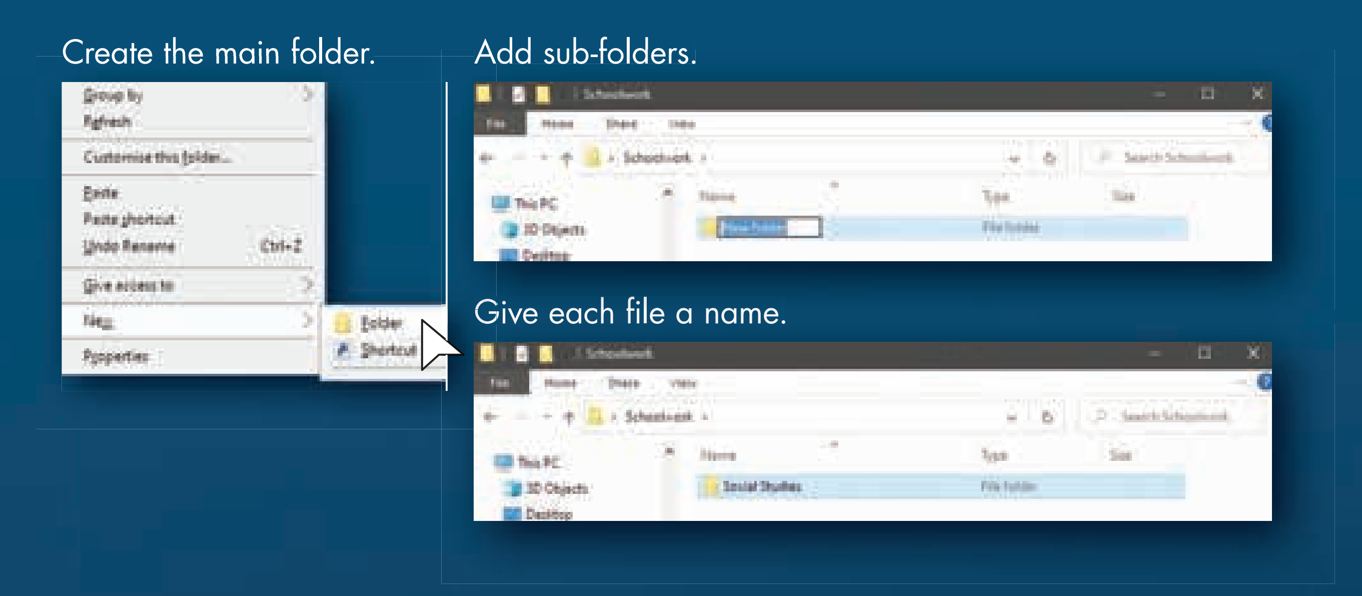
Learn

Information is everywhere

What do these photos represent?
Where are students finding information?



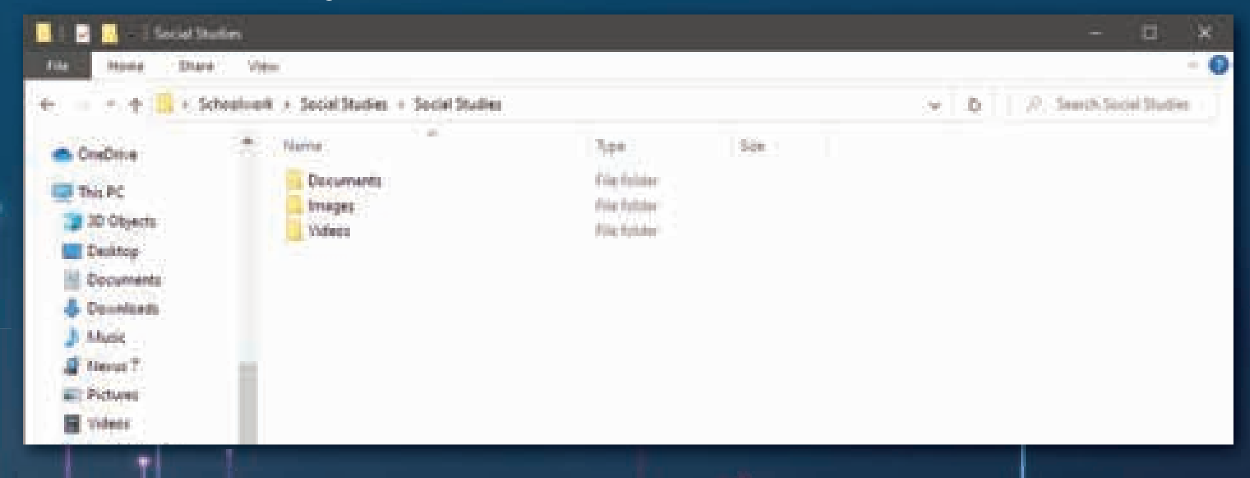
How to get organized using ICT tools


Create the main folder.

Add sub-folders.

Give each file a name.

Place documents, images, and videos in the correct folder.



Explore

How would you organize your schoolwork and personal files? Create a plan for both and discuss with a partner.

Review

1. How do digital accessories input their data for processing?
2. How do files help keep your information organized?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.



Digital file management

Comprehension

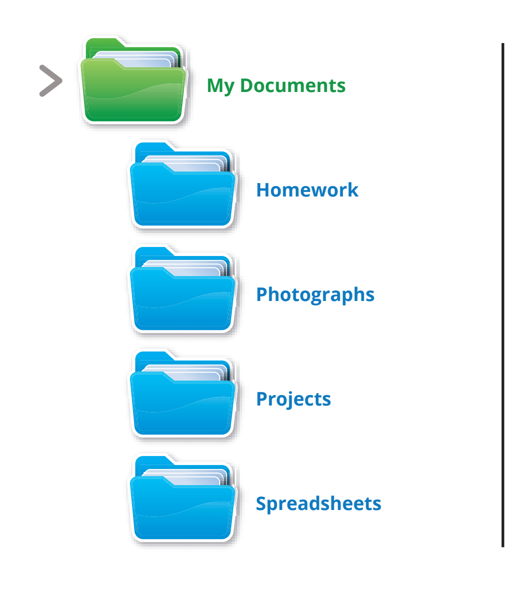
1 Look and answer

Look at the chart. Provide an example of how you might personally use each device accessory.

scanner	
digital camera	
QR code	

2 Look and answer

Look at the files shown in the two figures below. Which file system is better organized? Explain why.





Critical Thinking

3 Plan and practice

With a classmate, discuss how you might organize the files from task 2 that weren't well organized. Write the steps you will take.

Now draw your newly organized file system.

ICT and Me

4 Think and answer

Organize files on a personal or school-owned device. Explain how you organized them.

LESSON 7 Information search strategies

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain how planning effective searches aids in online research.	☐ Very well	☐ OK	☐ Need more work
• Discuss how using keywords and subtopics can increase the accuracy of search results.	☐ Very well	☐ OK	☐ Need more work
• Explain the useful strategies when performing online research and recording results.	☐ Very well	☐ OK	☐ Need more work

Engage

What are strategies you use or would use when searching for information online? What advice would you give to others?

Learn

When searching for information, you are in fact constructing knowledge. It is important that you plan your searches. You must also analyze and check the information you find critically. The internet is very big and you must decide exactly what information you want. A lot of the information you first find when searching will also need evaluating, selecting, and organizing, so you will then need to process and organize information before completing your work.

It is important to work collaboratively with classmates when constructing knowledge. Here are some suggested steps:

- Decide on a topic.
- Break the topic down into smaller subtopics, for example: What information about the original will we have to collect to build a replica? What technologies will be used to gather the information about materials, shapes, colors, sizes? What tools will be used to store this information?

- Conduct a knowledge share with your classmates. What do you know about already? What do you **not** know?
- Decide who is going to search for which information. It is good practice for two people to search for the same information and then share and contrast their results.
- Decide on keywords for searches about the subtopics, as it is not a good idea to use full sentences when searching.

Remember In Grade 4, Theme 2, lesson 5, we looked at keywords. Sometimes you might have to try different keywords in your online searches. When you do, consider using synonyms of the words. Use the same strategies above, but with different words with similar meanings.

- Share your results. Decide how to select and organize the information, and then how to organize it for presentation.

Explore

Choose someone in your community that you would like to mentor. It could be a friend, a family member, or a younger person that looks up to you.

- Choose a topic to help them with. Write it down. You'll be researching the topic in Learn by Doing. Some topic ideas: Ancient Egyptian inventions, local community concerns, recycling choices/challenges, Egyptians and their diets/nutrition, search for other water sources, pollution problems and solutions, etc.
- Choose specific aspects and keywords of that topic to concentrate on when researching the topic. Write them down.



Review

1. How can planning beforehand help you do better searches?
2. Your teacher asks you to research the origins of traditional Egyptian songs. You type the following: "What are some traditional Egyptian songs and where did they come from?". You realize quickly that you need to narrow your search. Provide an example of how you could narrow it.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct **I can . . .** box.

Learn by doing **LESSON 7**

Information search strategies

Research

1 Search and organize

Use your notes from Explore to research your topic of interest. Be sure to search for images in addition to text.

1. Evaluate your search results and choose what you feel is relevant and reliable. What sources did you choose? Include them here, with a short description:

____

____

____

____

____

____

2. Organize your sources. Then explain the method you used to organize them.

____

____

____

____

____

____

3. Write notes or an outline to prepare to write a report of your findings.

2 Write what you learned

Write a report using the information you found online.

ICT and Me

3 Think and answer

1. What strategies did you use during your online search?

2. What strategies did you use when it came to evaluating/choosing sources?

3. What strategies did you use when it came to organizing your information?

LESSON 8 Sharing information

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Discuss when I might choose to post information on an intranet.	☐ Very well ☐ OK ☐ Need more work
• Discuss when I might choose to post information on the internet.	☐ Very well ☐ OK ☐ Need more work
• Explain how to share info on spreadsheets.	☐ Very well ☐ OK ☐ Need more work

Engage

What are different ways you can share information with others, both in person and online?

Learn

Use graphs and charts

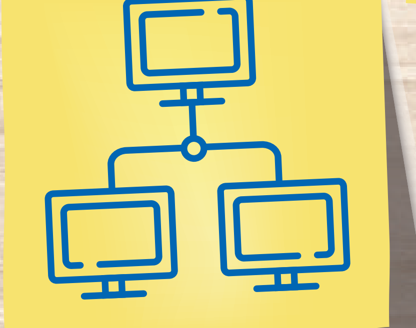
Create a graph or chart to share information.

Communicating with ICT tools

When sharing information online, you must decide which information should be shared using an intranet network or the internet.

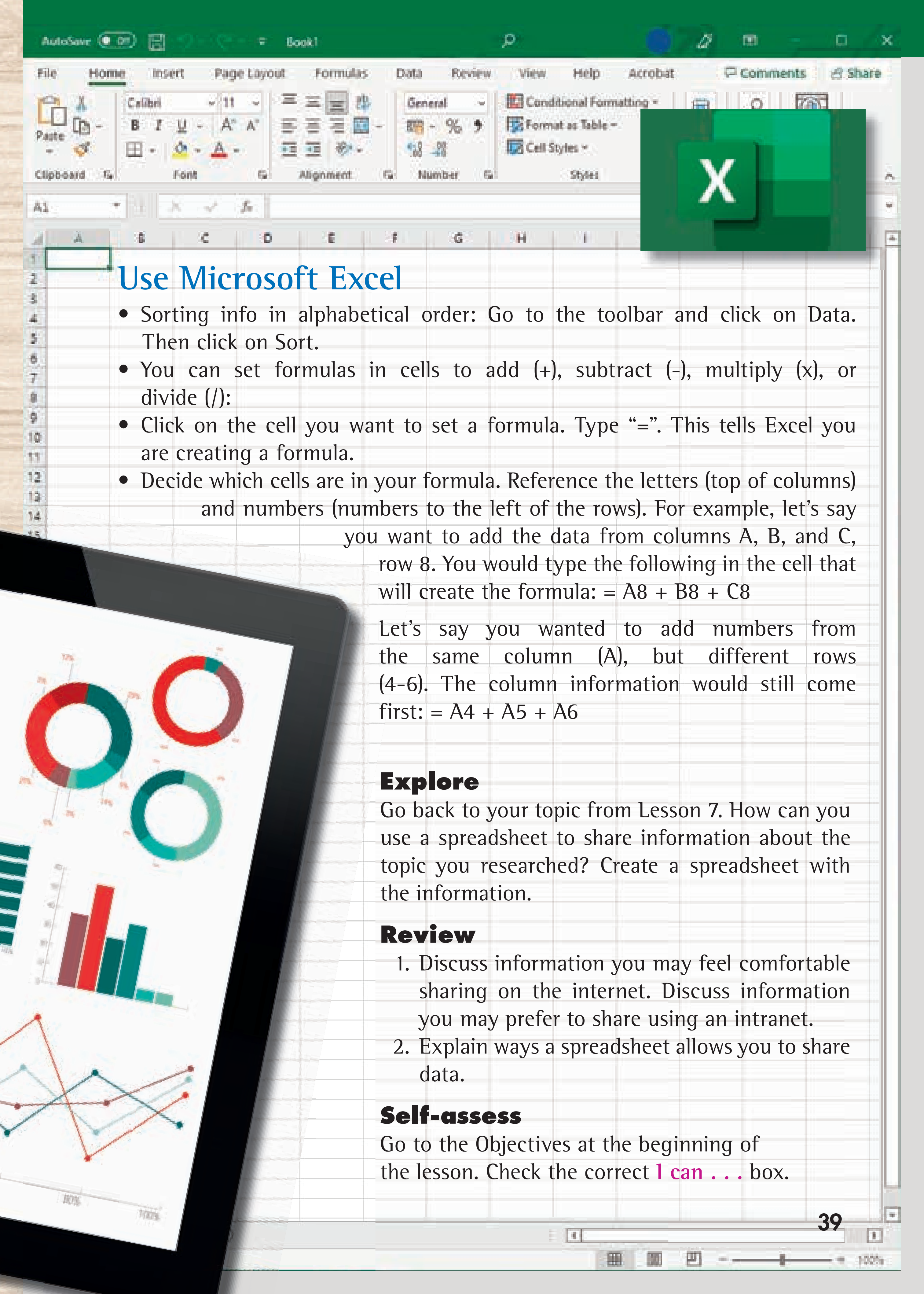
The internet is used to share over the web and is less secure.





An intranet is used to share in a closed network and is more secure.





Use Microsoft Excel

- Sorting info in alphabetical order: Go to the toolbar and click on Data. Then click on Sort.
- You can set formulas in cells to add (+), subtract (-), multiply (x), or divide (/):
- Click on the cell you want to set a formula. Type "=". This tells Excel you are creating a formula.
- Decide which cells are in your formula. Reference the letters (top of columns) and numbers (numbers to the left of the rows). For example, let's say you want to add the data from columns A, B, and C, row 8. You would type the following in the cell that will create the formula: = A8 + B8 + C8

Let's say you wanted to add numbers from the same column (A), but different rows (4-6). The column information would still come first: = A4 + A5 + A6

Explore

Go back to your topic from Lesson 7. How can you use a spreadsheet to share information about the topic you researched? Create a spreadsheet with the information.

Review

1. Discuss information you may feel comfortable sharing on the internet. Discuss information you may prefer to share using an intranet.
2. Explain ways a spreadsheet allows you to share data.

Self-assess

Go to the Objectives at the beginning of the lesson. Check the correct I can . . . box.

Learn by doing

LESSON 8 Sharing information

Comprehension

1 Read, think, and write

1. You want to subtract data from Columns A, C, and E, row 6. Write the formula you would use.

____

2. Give an example of information that you might set as a chart or graph.

____

3. Give an example of information that might be shared on a school intranet network. Give an example of information that might be shared on a school's webpage.

____

____

____

____

Life Skills

2 Prepare to share

1. Review the following:
   - Your report from Lesson 7
   - Your spreadsheet from Lesson 8's Explore
2. Decide how you will share your information with the person you chose. Circle your choice. Then explain your choice.

   intranet internet

____

____

____

3. What software / ICT tools will you use to share your information?

____

____

____

3 Create your presentation

Using the information you've organized, create your presentation using the software of your choice.

4 Share your presentation

Share your presentation with the person you chose, using the method you chose.

ICT and Me

5 Think and answer

Now write about your experience.

1. Did you come across any problems while researching your topic or creating your presentation? How did you troubleshoot / resolve your problems?

   ____

   ____

   ____

2. Explain how you used a spreadsheet to share information. What information did it provide?

   ____

   ____

   ____

3. Talk to the person you provided the information to. What did he/she find useful? What did he/she think could be clarified?

   ____

   ____

   ____

4. What did you think you did best? What might you do differently next time?

   ____

   ____

   ____

REVIEW Theme 1

Vocabulary

1 Write and compare

Write a sentence for each set of words to explain the connection between them. Then compare your sentences with a partner.

1. **networks** and the **Internet of Things**

____

2. **folder** and **file**

____

Review Questions

2 Read and answer

1. How does Fred Hiebert share information?

____

2. What might happen if you have too many applications open?

____

3. Give an example of a computer network.

____

4. Share a way you can use a computer network to communicate.

____

5. What does it mean to follow a process?

____

6. Name three device accessories.

____

7. Write an example of a search entry using the Boolean search method.

____

8. What information might be included on a spreadsheet?

____

____

____

Critical Thinking

3 Think and answer

1. Explain what it means to troubleshoot an issue and provide an example.

____

____

2. What type of information might a school put on its intranet? What type of information might a school put on the internet?

____

____

3. How might someone use a spreadsheet in their PowerPoint presentation?

____

____

Essential Question

4 Think and complete

After studying this theme, I know that I can use ICT tools efficiently to communicate effectively because ____

____

____

Activity

5 Research, create, and show

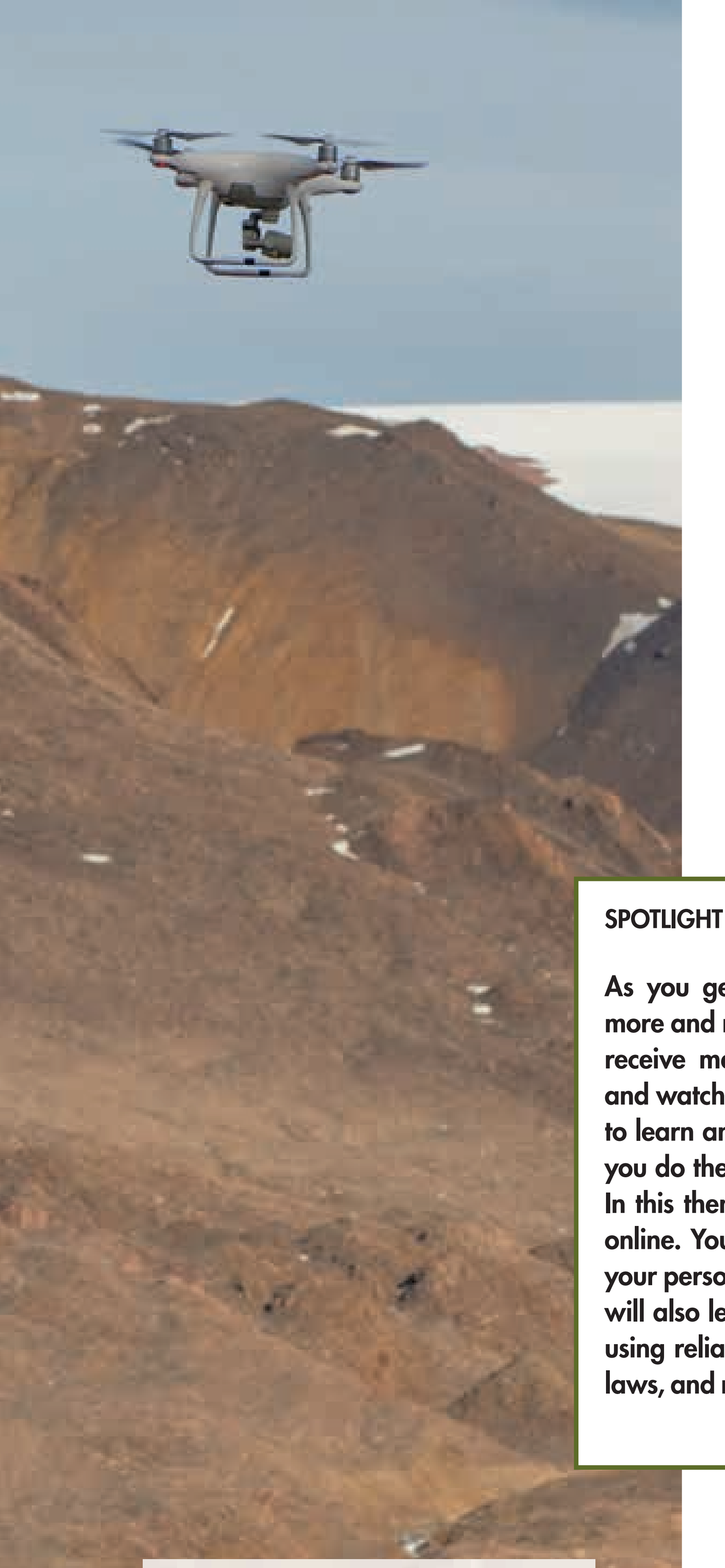
Create your own exhibition about a historical site in Egypt.
Find photographs or screenshots or draw pictures of it. Then make labels and write captions for your photographs and screenshots and illustrations.
Include the following:

- name of the historical site you chose
- location of the historical site
- three interesting facts about the site
- special features of the site
- how/when people can visit the site
- Invite your classmates to view your exhibition.



THEME 2

Digital safety and security precautions



Photographer Jeff Kerby flies a drone with a camera to capture aerial views of landscapes.

ESSENTIAL QUESTION:

How do we keep ourselves and our data safe and secure when using ICT tools?

SPOTLIGHT on Theme 2

As you get older, you may use the internet more and more, to conduct research, send and receive messages, access social media sites, and watch videos. The internet is a great place to learn and hang out with friends, as long as you do these things safely.

In this theme, you will learn how to stay safe online. You will learn how to protect yourself, your personal information, and your data. You will also learn how to conduct online research using reliable sources, follow online rules and laws, and respect other people's creative work.



LESSON 1 EXPLORER IN ACTION

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain the importance of copyright protection.	☐ Very well	☐ OK	☐ Need more work
• Plan a photography expedition.	☐ Very well	☐ OK	☐ Need more work
• Identify some technological problems and how to solve them.	☐ Very well	☐ OK	☐ Need more work

Engage

How do you plan for a trip to a different city? What do you take with you?

Learn

Jeff Kerby is an ecologist and a photographer. He has worked on exciting photography expeditions in Africa, North America, and the Arctic. Photography expeditions are trips to places where one takes photographs of the area. Mr. Kerby mainly photographs landscapes and animals.

To prepare for a trip, Mr. Kerby considers exactly where he's going, what he is going to do there, and how he will carry out his work securely. He travels with his camera and several camera lenses, batteries for the camera, a laptop, hard drives, and sometimes a drone. He uses his phone to take quick photos and to navigate with the GPS mapping tool.

At the end of each day, Mr. Kerby backs up all of the images he has taken with his camera or drone onto two external hard drives. If he needs to share any photos with colleagues immediately, he uses cell phone applications.

Generally speaking, everyone owns the copyright to images they take unless they sell those rights before or after they take the photographs. Owning photos means having the legal right, or copyright, to publish or sell the photos. Unfortunately, some people use photographs that were taken by others without asking permission or without purchasing the right to use the image. This is called copyright infringement.

Photographers can protect their work from copyright infringement in several ways. They might place a watermark on their photos or add copyright information, such as their name, to the metadata of each photo. Mr. Kerby ensures his work is protected by sharing his high-resolution photos only with people he trusts.

Otherwise, he shares low-resolution photos that won't look good if printed or uploaded to a website. He also uses reverse image searches to find out if any of his photos are being used without his permission.

Copyright infringement is against the law. Article 69 in the 2014 Egyptian constitution confirms that the state protects all types of intellectual property in all fields through a specialized body that defends these rights. Many Egyptian laws protecting copyright have been written based on this article.



Video

Watch the video about Jeff Kerby. What technologies are most useful to him on his expeditions? What does he do to prevent technology fails?

Explore

We take hundreds of photos every year and store them on our smart phones and on our computers. Understanding how different technologies work can prevent possible problems. How important is it to back up your photos? Discuss with your classmates.

Review

1. A friend likes a photo he found on the internet and wants to share it. What advice would you give him? How would you explain copyright?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 1 EXPLORER IN ACTION

1 Creative planning

Plan a photography expedition. Think and answer.

1. When would you go? How would you get there? What would you take with you?

____

____

____

____

____

2. What technologies would you use on your expedition? What technological problems might you face? How would you solve them?

____

____

____

____

____

2 Research

Use the internet to research film cameras and digital cameras.
Write your findings in the table.

Camera type	Advantages	Disadvantages
Film camera		
Digital camera		
Which one do you prefer?		

3 Comprehension

Read, think and answer

In Egypt, there are many laws to protect copyright. Law 82 of the year 2002 is the main Intellectual Property law. It focuses on the protection of copyright and manages a national copyright system. Copyright is protected by different government entities and non-governmental organizations such as the Egyptian Center of Information Technology and Intellectual Property Rights.

The Egyptian Ministry of Communications has hosted conferences focusing on copyright. In November 2008, there was a regional conference on "Intellectual Property Rights Enforcement in the Digital Age: Procedures and Practices". It was organized by various Egyptian entities and the World Intellectual Property Organization (WIPO).

1. Why is it important to have laws that protect copyright?
2. How do conferences help to protect copyright?
3. How can citizens help to protect copyright?

4 Think and answer about me

1. After the photo expedition, who would you share your photos with? How would you share them?

____
____
____
____

2. How would you protect your photos?

____
____
____
____

3. How would you use your photos? Would you publish or sell them?

____
____
____
____

LESSON 2 Protecting ourselves and our information

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Describe the importance of protecting personal information.	☐ Very well ☐ OK ☐ Need more work
• Describe the importance of backing up data.	☐ Very well ☐ OK ☐ Need more work
• Explain ways to protect personal information and data.	☐ Very well ☐ OK ☐ Need more work

Engage

Why is it important to protect the data on a computer or other device?

Learn

Protecting your personal data

Stolen data

Hackers use the internet to break into a computer system and steal personal information, such as your name, address, date of birth, and your passwords. This personal information is called Personally Identifiable Information (PII).

A hacker can use someone's email address and password to send a virus to all the email addresses in your email account. Hackers can also use an adult's bank account number to take money from that account.



There are many ways you can keep your PII safe. Limit the personal information you share online. Don't sign up for a website if it asks for too much personal information. Use different strong passwords that contain letters, numbers, and special signs, and are different for each website you sign up for, because if your password is discovered, a hacker will then have access to everything. Use anti-virus software on all of your devices, and update your devices regularly. The updates include changes that keep your data safe.

Lost files

You should also know how to protect the files that you create or store on a device. You need to protect these files from viruses, software problems, or human errors, such as dropping and breaking your laptop.

There are several ways to back up your data. Some apps and software programs back up data automatically. You can use a data-storage device that you attach to your computer, such as a flash drive or an external hard drive. This is called a hybrid backup. It is a safer way to back up and store files.



An **external hard disk** drive is one of the accessories that you can use to save your files securely, and backup copies of your files that are important and private to you to prevent the possibility of losing them on your device. The hard disk has more space than the Flash Memory, but it may also be used for the same purpose.

Explore

With a partner, make a list of the suggestions from the reading that protect data from being stolen. Check off the items you already do. Create a plan to start using the other ideas. Share your plan with your family.

Review

1. How might you be affected if you use weak passwords?
2. Do you know any adults who might not know about keeping PII safe? What additional examples of PII are important for them to know about?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 2 Protecting ourselves and our information

Comprehension

1 Look and match

Match the backup methods for each situation.

external drive	Flash Memory	hybrid backup (a - b)
a	b	c

1. I want to be very sure that my documents and files are saved.	☐
2. I want to back up my files but I don't have an internet connection.	☐
3. I need to store my research paper on a device so I can print it at school.	☐

Critical Thinking

2 Think and write

Make a list of the ICT tools you use to back up your homework and projects. Then, ask your friends and your parents what tools they use and add their answers to your list.

____

____

____

____

____

____

____

____

3 Think and write

List the files and folders that you want to back up on your computer, phone, or other device. This can include items like music and photos. Which items should you backup first? Rank the items from most important (1) to least important (5). Share your list with a classmate. Talk about the similarities and differences in your lists.

Item	Rank

4 Think and answer

You want to create an account for an online quiz that tells you the job you should have when you grow up. Which pieces of PII do you think are OK to share?

Register new account

your first name

your age

your last name

your date of birth

your address

your place of birth

the name of your school

your parent's bank account number OR credit card number

Create Account

Cancel

LESSON 3 Password security

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Understand the importance of password protection.	☐ Very well	☐ OK	☐ Need more work
• Explain the purpose of a password manager.	☐ Very well	☐ OK	☐ Need more work
• Discuss how to use multi-factor authentication to protect your data and accounts.	☐ Very well	☐ OK	☐ Need more work

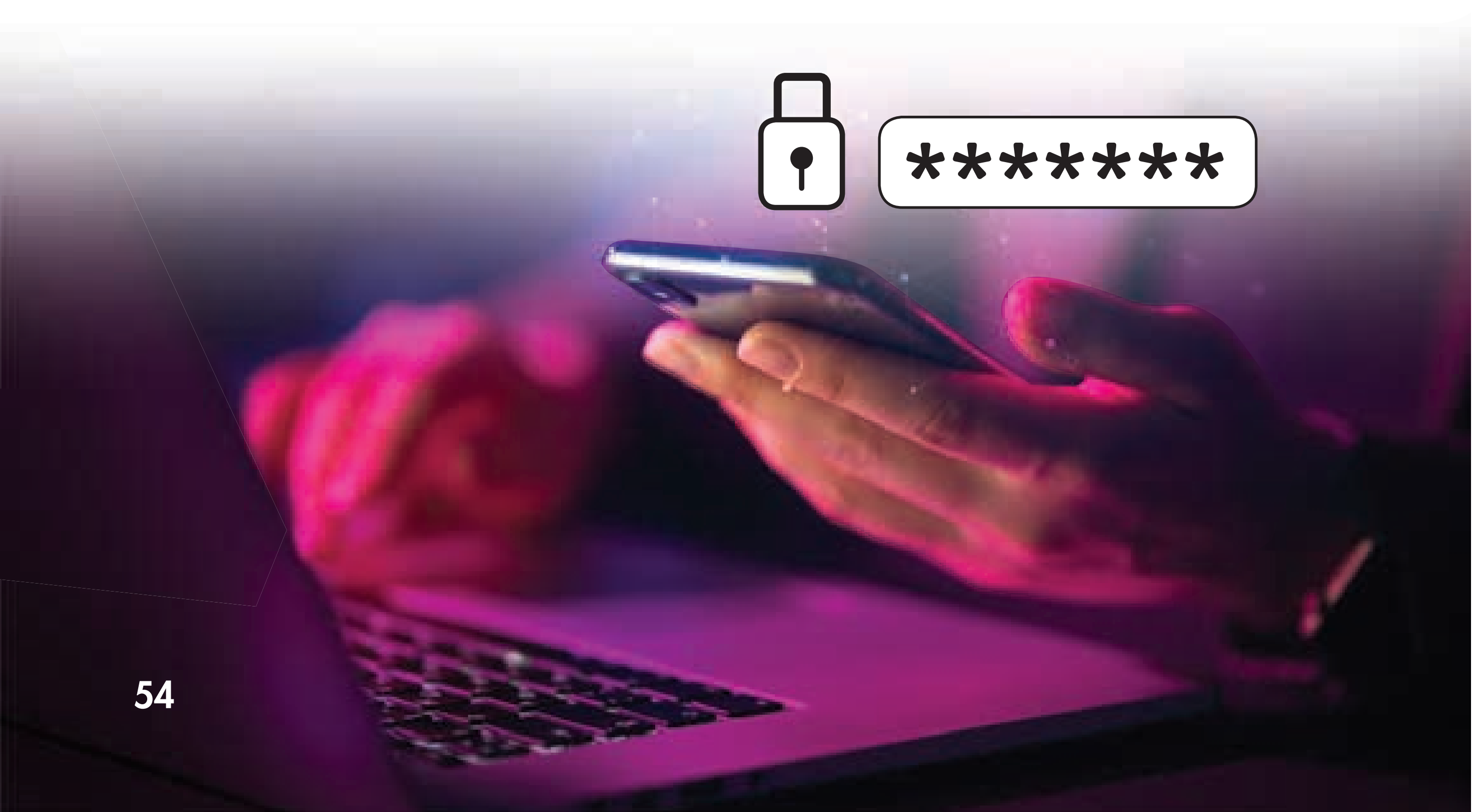
Engage

How many different passwords do you use on your devices and online? How strong do you think your passwords are? Why?

Learn

Reasons to protect your password

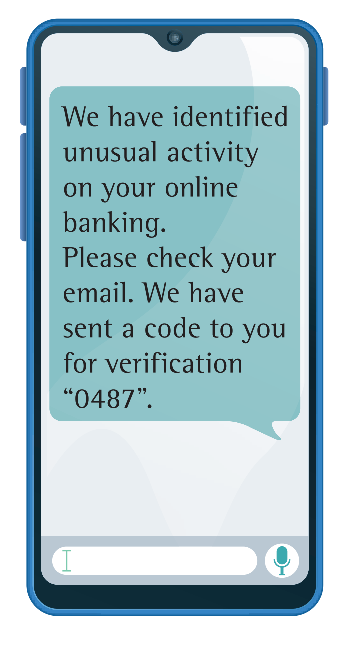
There are many ways hackers can get your password. One way is called phishing. Phishing is sending a message via e-mail or social media applications that looks real, but isn't. One type of phishing scam, is a message which says that you have won a prize, but you have to give your bank account details to get the prize. Another encourages you to act quickly. When an attachment, or file, is opened, data-stealing software is installed on the person's computer, or the user is asked to enter sensitive information such as bank account details. Ways of identifying such messages, include misspelled words, grammar errors, or requests for too much personal data. Smishing is the same thing, but is a text message instead of an email.



Password managers

You need strong passwords to help protect your personal data from hackers. A password manager creates a strong, unique password for each of your accounts. It also tells you if the passwords you already have are too weak or if you've reused them. It can even tell you if one of your passwords has been stolen online.

Multi-factor authentication



Passwords can also be strengthened through Multi-Factor Identification (MFA). This means you provide at least two ways of identifying yourself. It often combines a known factor, such as a password or PIN (personal identification number), with a factor you have, such as an email or a one-time code. For example, you might enter your password on a game website and receive a text verifying you are signing on to the site. Only after both steps are complete can you access the game. This means hackers who access your online passwords through data breaches or phishing attacks can't access your accounts because they don't have the second factor. Another type of MFA is when you log into one of your accounts from any device other than your permanent device. For example, you try to log into the game website on a different PC to your usual PC. You will be sent a text message to your mobile, asking you to confirm that you are the person who owns the email address that you are logging in as. The text message will include a number code which will give you access to your account, and it is specified for a short period of time and for one time only.

Explore

In a group, make a list of the advantages of MFA. Then brainstorm and list the disadvantages. Discuss whether the advantages outweigh the disadvantages or vice versa. Share your results with the entire class.

Review

1. What examples of phishing or smishing attacks have you heard of or seen?
2. Have you used multi-factor authentication or have you seen someone else use it? What kinds of verification did they use?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 3 Password security

Comprehension

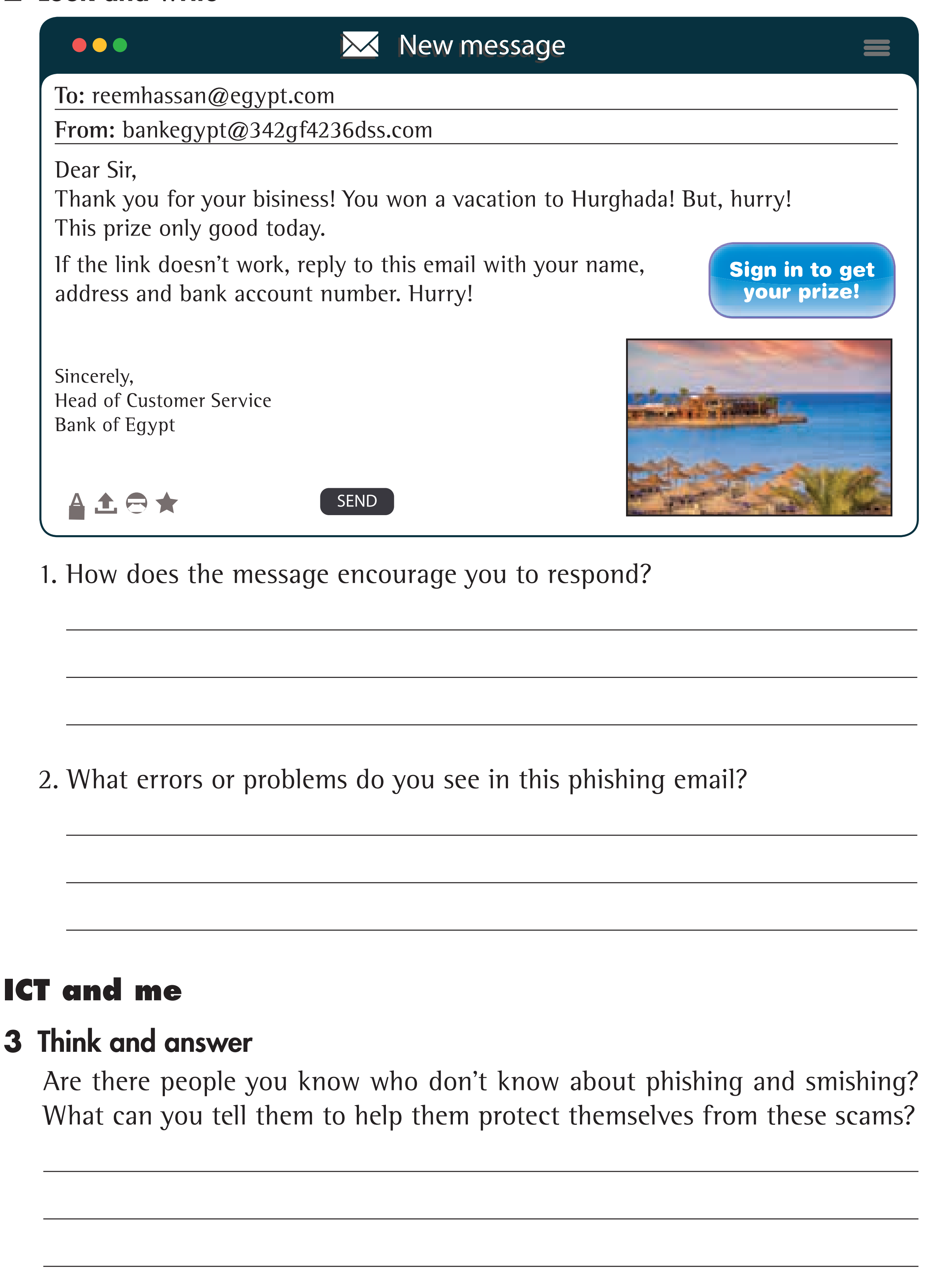
1 Think and answer

Check the type of verification for each item below.

	Something you know	Something you have	Something you are or do
your fingerprint			
a text message			
the answer to a security question			
a verification code			

Issues and challenges

2 Look and write



1. How does the message encourage you to respond?

____

____

____

2. What errors or problems do you see in this phishing email?

____

____

____

ICT and me

3 Think and answer

Are there people you know who don't know about phishing and smishing? What can you tell them to help them protect themselves from these scams?

____

____

____

____

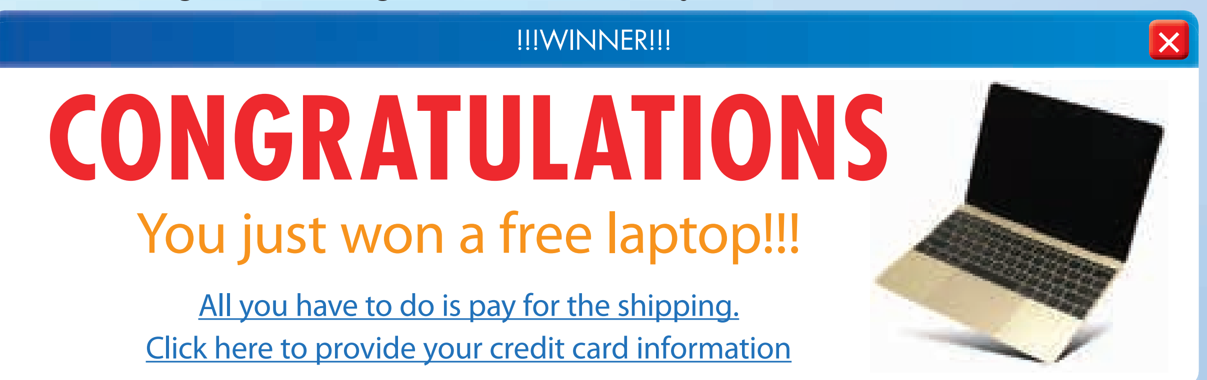
LESSON 4 How to deal with fake websites

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Discuss what scam websites are trying to accomplish	☐ Very well ☐ OK ☐ Need more work
• Explain how to avoid scam websites.	☐ Very well ☐ OK ☐ Need more work
• Identify people or organizations to whom you can report problems with websites.	☐ Very well ☐ OK ☐ Need more work

Engage

People often say "It is too good to be true!" Do you believe that? What would be something that is too good to be true for you?



Learn

Going online often means visiting new websites and interacting with new people. You should be careful in these situations, just as you would in any new environment.

Scam websites

Sarah and her brother Bilal love to learn about fixing computers. While researching how to fix a problem with their laptop, they found a website with some information. While on the website a notice popped up saying they had won a free computer. All they had to do was pay for the shipping by giving the website their parents' credit-card details. They were so excited! When they told their mother about the prize, and what they needed to do to get the free laptop, their mother sat them down and told them the truth.

She explained that some websites are scam websites. These websites can be phishing websites that present fake situations that try and get your information. These types of websites include online shopping sites that never send you the correct items you bought, scareware websites that say your computer has a problem and you need to download something, or a "sweepstakes" scam that offers you a prize that never comes.

How scam websites operate

All of these phishing sites operate on the same principles.

- First, they try and **bait** you. They want you to get excited or draw your attention to the site.
- Next, they try and **compromise** your privacy by getting your personal information or by getting access to your device.
- Finally, they **exploit** the information they have gained about you in a bad way, or the possibility to hack your device to make themselves money. Each time it will look different, but all scam websites follow these basic principles.

Sarah and Bilal were so upset. They wanted to know what they could do to stop scam websites. Their mother told them the best thing they could do was to learn how to avoid these websites, for example:

- Check that the URL (Uniform Resource Locator) of the website is credible. This is basically the address of the website.
- Check for misspelling or bad grammar – a reliable source will be well-written, with almost no mistakes.
- Do a search online to see if it is a known scam. If something doesn't look right, it most likely is a scam website.

If you are a victim of a scam website, report it. Tell a trusted adult like your parents or teacher. You can also contact the child helpline or The General Department for Combating Internet Crimes. Report the scam website to the service provider, the e-commerce store, and your bank, with the help of your teacher or family member.

Explore

Many scam websites use language to get you to feel excited, or a sense of urgency or fear to make you do something quickly without thinking too much about it. What are some words or situations a scam website might use to create a sense of excitement? Urgency? Fear?

Review

1. How do you think you would feel after being tricked by a fake website? Why should you not feel bad or ashamed of being tricked?
2. Why is it important to report the scam website?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 4**

How to deal with fake websites

Comprehension

1 Read and answer

Dissecting the URL:

All URLs are made up of three main parts – the protocol, the resource, name, and the file path. You should understand the different parts of a URL so you can spot something that doesn't look right.

- A URL starts with the **protocol**. This determines how the information will be transferred. Some examples include http, https.
- The **resource name** is the web server, or site, being requested and shows who owns that space. It often ends with .com, .net, .org, .gov, or .edu.
- The last part of the URL is the **file path**. This identifies the specific resource the link is giving you access to.



Below are some important things to remember when looking at a URL. Read the situation and answer the questions.

1. You want to access the Egyptian Knowledge Bank. You look at the resource name and it says https://www.ekkbb.com. What is wrong with the URL?

____

____

2. You try to access the Bibliotheca Alexandrina website online. The URL looks like this: https://bibalex.org.scam.org. What is wrong with the URL?

____

____

ICT and me

2 Think and answer

Create your own personal plan to deal with scam websites. You may need to find some answers online.
What individual would you report the scam website to?

What service provider would you reach out to? What are their contact details?

What Egyptian authorities would you report the scam website to? What are their contact details?

Summarize the advice learned above into two short phrases. Add a third piece of advice to avoid a scam website.

Research

3 Think, do, and answer

You have learned that the most common scam websites are phishing websites, online shopping websites, scareware websites, and the sweepstakes scam.

Ask ten relatives, or adults at your school, which scam websites they have heard of and which ones they have seen themselves. Make a bar chart to show how many people have heard of each scam website and how many have actually seen each scam website. Share the answers with the class.

Write advice to your relatives and the adults who you asked about the scam websites.

- What should they watch out for?
- What should they do if they fall for a scam website?

LESSON 5 Intellectual property rights

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Understand what copyright means.	☐ Very well	☐ OK	☐ Need more work
• Respects the law when using. information, devices, and networks.	☐ Very well	☐ OK	☐ Need more work
• Identify when I need to attribute a creator's work.	☐ Very well	☐ OK	☐ Need more work

Engage

What would you think if someone took something you created and put it online without your permission? What if they made money off your creation?

Learn

Online content

It might be tempting to take the content you see online, and copy and paste it into your school report, but copyright law protects print and digital content. Copyright gives creators legal protection for the things they create.

Copyright

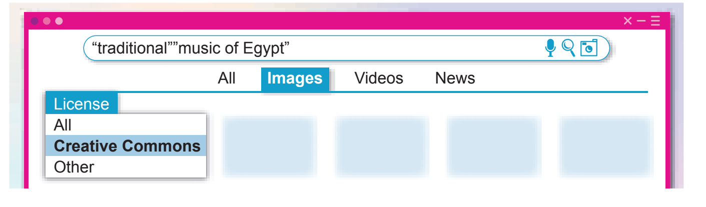
The international symbol for copyright is the letter C with a circle around it. Copyright protects creators' work. Copyright laws cover many kinds of creations, including this book! Copyright also protects images, music, movies, games, computer software, and websites. The copyright for a website is usually at the bottom of the home page.

What is NOT covered by copyright?
-works in the public domain
-facts
-discoveries
-official documents such as laws
-creative works whose owner has been dead for 50 years

You might be "using" copyrighted content if you download a TV episode on YouTube, or use someone else's artwork on your social media account. When you use copyrighted content, you should respect the creator's work and use it fairly. Ask for permission to use it, and attribute it (or give credit) to the creator.

Are there sources on the internet that do not fall under copyright? Sometimes the owner of a creative work gives permission to reuse his work at any time and any place, so we can use it freely; this is called "creative commons". In addition, Egyptian law gives freedom to use a creator's creative work 50 years after their death. Therefore, you should make sure to use creative work this applies to.

Written content



You should only use a small part of someone else's writing in a research paper. This might be a few words or a few sentences. There are two ways to use the writings of others: the first is to use the exact words as they are without change, and the second is to paraphrase ideas in your own style. In both cases, you must mention the name of the writers.

Images

Images are also protected by copyright. When you use an image, include the title, the artist or photographer's name, a link to the original image, and what kind of copyright it is protected by. If you don't want to get permission or buy images, you can make or take your own images instead.

Public domain and Creative Commons

Are there sources on the internet that do not fall under copyright?
Sources in the public domain and with Creative Commons reuse licenses can be used without a creator's permission. A Creative Commons reuse license means the creator has given permission for their work to be used anytime and anywhere. If you are searching for images online, you can filter your results to show only images with this license.
The public domain includes all creative works not covered by copyright law. In Egypt, creative works normally enter the public domain 50 years after the creator of the work dies.

Explore

Find a quote that you like. It can be a quote about life, something historical, or something from a book you have read. Write a few sentences about why you like it. Share the quote with your class. Cite the author and source. Explain why you think the quote is important or interesting.

Review



1. What are some specific things you have, see, or know that are covered by copyright law? Is it easy or hard to come up with examples? Why do you think that is?
2. Why do many people think it's OK to reuse photos they found online?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 5**

Intellectual property rights

Vocabulary

1 Look and match

Write every part of the information shown under the photo, in the corresponding box.

Title:

Author:

"Bird, Namibia",©
Jeff Kerby/National Geographic
Image Collection

License:

Source:

Comprehension

2 Read and write

Write sentences to explain the following words.

1. copyright ____
2. copyrighted content ____
3. paraphrase ____
4. public domain ____
5. Creative Commons ____

Critical thinking

3 Think and answer

Which of the following is likely to have a *copyright* on the information available on their website? Discuss why you think they do or don't. How can you confirm your answers?

The Ministry of Education

EKB

Telecom Egypt

Alexandria University

Nature Conservation Egypt

____

____

____

____

____

Life skills

4 Think and answer

Which item from the following is copyrighted? Why?

1. a. a Nike ad with a photo in a magazine
   b. a photo you took in front of a Nike store
2. a. a 200-year-old book about desert life
   b. an online article about cactus
3. a. an article about the development of algebra
   b. the mathematical equation $\frac{5}{2}x + 5 = 10$

LESSON 6 Using digital sources

Objectives

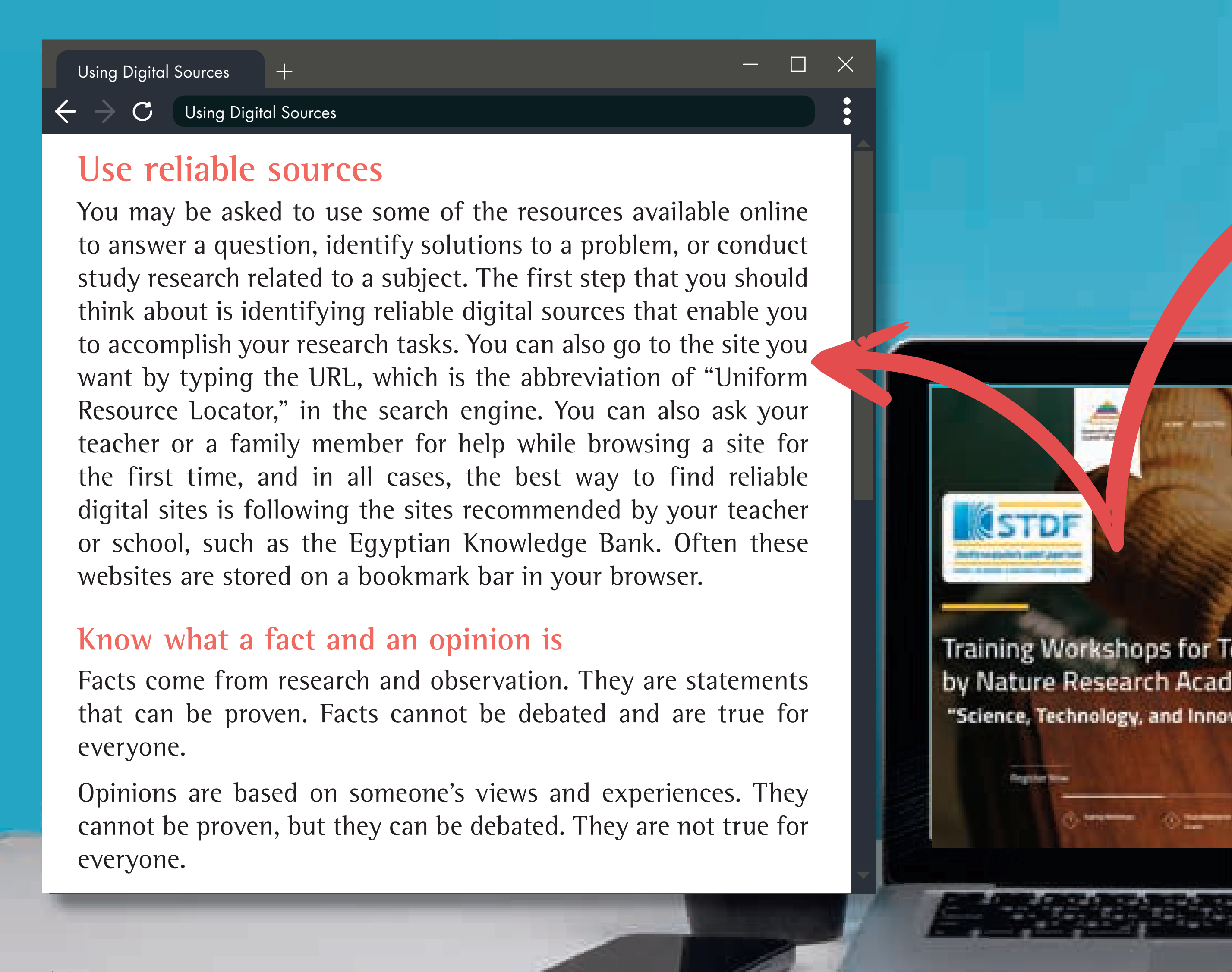
By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Use ICT tools and sources to support decision-making processes.	☐ Very well ☐ OK ☐ Need more work
• Differentiate between opinions and facts in different sources.	☐ Very well ☐ OK ☐ Need more work
• Explain the different kinds of sources that can be used to conduct online research.	☐ Very well ☐ OK ☐ Need more work

Engage

What are the characteristics of a reliable online source?

Learn

Use multiple reliable sources to answer a question or solve a problem.



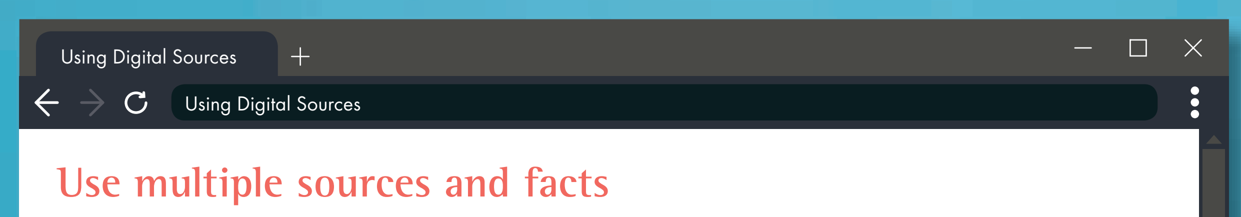
Use reliable sources

You may be asked to use some of the resources available online to answer a question, identify solutions to a problem, or conduct study research related to a subject. The first step that you should think about is identifying reliable digital sources that enable you to accomplish your research tasks. You can also go to the site you want by typing the URL, which is the abbreviation of “Uniform Resource Locator,” in the search engine. You can also ask your teacher or a family member for help while browsing a site for the first time, and in all cases, the best way to find reliable digital sites is following the sites recommended by your teacher or school, such as the Egyptian Knowledge Bank. Often these websites are stored on a bookmark bar in your browser.

Know what a fact and an opinion is

Facts come from research and observation. They are statements that can be proven. Facts cannot be debated and are true for everyone.

Opinions are based on someone’s views and experiences. They cannot be proven, but they can be debated. They are not true for everyone.



Use multiple sources and facts

It's a good decision to use multiple sources in your research. This helps make sure you know all the important facts about a topic. It's OK if two reliable websites include the same information. It often means that the facts are true. Write notes for the first source, and then scan the next source for additional facts to add to your notes. If two online sources have different information, double-check that both sites are reliable. Then make sure the information is based on fact instead of opinion. Following copyright rules and laws is also a good decision.

Sources other than text in online articles and encyclopedias may include important information. If you need facts that can be measured, maps, graphs, infographics, and charts will be useful. Pictures and videos can also be reliable sources. They sometimes help us acquire information better through watching than just reading words, too. Archives and databases can also be reliable sources. They contain many types of research materials, including books, articles, diaries, letters, and photographs. The Egyptian Knowledge Bank is an example of an archive.

Explore

Write two facts and one opinion on a sheet of paper. Read your sentences to a partner. Have them guess which sentence is the opinion. Ask them to use what they know about facts and opinion to justify their answer.

Review

1. What are some facts and opinions you have heard recently?
2. What different kinds of sources have you used in the past? What new kinds of sources would you like to use?

Self-assess

Go to the Objectives at the beginning of the lesson. Check the correct **I can . . .** box.



Using digital sources

Life skills

1 Look and answer

Read each statement. Write *Fact* or *Opinion* next to each statement. Discuss your answers with a partner.

1. Some spiders work together to build giant webs. ____________
2. Spiders are big and hairy. ____________
3. Wind and rain often damage a spider's web. ____________
4. You shouldn't kill spiders in your house. ____________

2 Think and write

1. Read the two texts. Underline the important facts in each text. Put a checkmark next to each fact that is repeated in the second text. Put a question mark next to facts that are different in each text.

   Text 1: In 2020, Saddam Killany set a Guinness World Record for the longest saltwater dive. He remained underwater for 145 hours and 30 minutes. He beat the previous record by three hours. While underwater he ate, slept, and prayed. He also painted the largest underwater painting. Now he holds two Guinness World Records!

   Text 2: Imagine spending six days of your life underwater. Saddam Killany spent 145 hours, 25 minutes and 25 seconds underwater in the Red Sea, near Dahab, in 2020 to set a Guinness World Record for diving. The previous record was 142 hours, 42 minutes and 42 seconds. Killany also got engaged underwater to his fiancée, Pia Lagora.

2. What would you do to verify the different facts in each text?

   ____

3 Discuss and write

Does the browser on your school or home computers have a bookmark bar? If so, list the sites on the bar here. Add any additional sites you think should be on the bar. If your school or home computers do not have a bookmark bar, list the websites you would add to create a classroom bookmark bar.

____

____

____

Issues and challenges

4 Read and choose

You want to use online resources to conduct study research and want to identify the most reliable digital sources that enable you to accomplish your research task. Do you ...

1. use a website recommended by your teacher? and why? ☐
2. use one source in your research? and why? ☐
3. use an opinion that has been given on a website? and why? ☐
4. use archives and databases? and why? ☐
5. Follow copyright rules and laws? and why? ☐

Research

5 Think and answer

1. Brainstorm and write research topics you are interested in. Think about what you like or what you would like to know more about. It can be a broad subject such as music, an animal you like, or a famous person. Write at least five ideas. Then choose one idea as your topic.

___

___

___

2. Circle the different kinds of online sources you think will be helpful for your research report. Put a star next to the two kinds of sources that are most important.

articles — diary entries — letters — photographs — videos — maps — graphs — charts

LESSON 7 Advanced searches

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Choose specific and accurate online search terms.	☐ Very well ☐ OK ☐ Need more work
• Use search engines and advanced searching tools.	☐ Very well ☐ OK ☐ Need more work
• Identify online sources that meet my research needs.	☐ Very well ☐ OK ☐ Need more work

Engage

Worldwide, how many internet searches do you think are completed every day?

Learn

Getting specific search results starts with a specific topic and research questions. "The Aswan Dam" is not a specific topic. "The construction of the Aswan Dam" is specific. For this topic, the research questions might include:
What materials were used to build the Aswan Dam? How many workers built the Aswan Dam?
You can use your research questions to find **keywords** for your online search. The keywords in the first question above are "materials" and "Aswan Dam." The keywords in the second question are "how many" (or "number"), "workers," and "Aswan Dam."

Accurate search terms

Use synonyms to make your search terms more accurate. For example, you want to research the amount of time 13- to 18-year-old people spend online each day. You use the search string *children time computer,* but there are too many results.



Changing the search string to *teenagers time online* will narrow the results. If you put the search string in quotation marks, your search will be narrowed even more, to only results with the exact terms in quotation marks.

Some search engines suggest keywords and similar searches. Search engines also have an advanced searching tool that helps you limit search results. You can use them to combine, or exclude, keywords or limit the results to specific domains such as .edu or .gov.

Boolean operators and search modifiers

AND – Results will include both terms. **Example:** video games and teenagers	" " – Results will include the exact terms. **Example:** "video games"
OR – Results will include either term. **Example:** child or teenager	( ) – Results prioritize what is in parentheses. **Example:** (video games) teenagers
NOT – Results will not include the terms. **Example:** video games not online	* – Results will include all forms of a word. **Example:** teen*

Search results

Scan the summary for each search result. Look for titles connected to your topic and keywords in bold. Scan for facts that answer your research questions. Choose the results that have many of these items. Then click on each possible source and skim the content. Look for titles, headers, and keywords that match your research topic and questions. Choose the sources with the best match.

Explore

Think about a local or global issue that you are passionate about. Write down search terms you would use to find out more about the issue. Share your issue and search terms with your class.

Review

1. Why might you use a search result with a specific domain name, such as .edu or .gov?
2. Have you had search results that were not accurate? Why were they not accurate? What did you do?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 7 Advanced searches

Comprehension

1 Write and compare

Write a sentence for each set of words to explain the connection between them.

1. research questions and search terms

___

2. keyword and search string

___

3. search engine and advanced searching tool

___

Research

2 Select your topic

Review the topic you selected in the last lesson. Narrow the topic if it is too broad. Write your topic here. Review it with a partner and your teacher.

___

3 Write research questions

Write two or three research questions for your topic. Then circle the words in each question that you can use for search terms.

___

___

___

4 Choose search terms

Write the search terms you circled in the last activity. Add or change the terms to make them more specific and accurate.

___

___

___

5 Analyze search results

List the domain name of the sources you think will best answer your research questions. If you have Internet access, check the items each resource has.

Domain names	Do I see...			
	my key-words?	a title that matches my topic?	headers that match my topic?	facts that answer my research questions?
1.				
2.				
3.				
4.				

Critical thinking

6 Think and write

How would you change or combine these keywords, or use advanced search engine tools, to give you results that are about riding horses near the Red Sea rather than about red seahorses? Try your keywords online. Revise your search until you get accurate results.

Keywords: Red Sea horses

___

___

LESSON 8 Documenting information appropriately

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain how to take notes and paraphrase online content.	☐ Very well	☐ OK	☐ Need more work
• Identify the reasons for quoting online content and how to do it.	☐ Very well	☐ OK	☐ Need more work
• Explain how to cite online sources.	☐ Very well	☐ OK	☐ Need more work

Engage

Which do you prefer, taking notes on paper or using computer software? Why?

Search sources by keyword To search an online source by keyword, type CTRL + F and enter the term in the search box. The keyword will be highlighted everywhere it appears on the page.

Learn

Taking notes

A research paper is written in your own words. This is easier to do if you start with notes written in your own words. For each source, add the URL and the author's name at the top of your notes. Reread each note. If information is missing, return to the source and find the missing information. When an author's words are important or unforgettable, use quotation marks to add those exact words to your notes.

Paraphrasing

When you paraphrase, use your own words to explain the ideas of the writer (author). You change some of the vocabulary words, the order of the ideas, and the sentence structure. By paraphrasing, you are showing respect for the author's work.



Using quotes

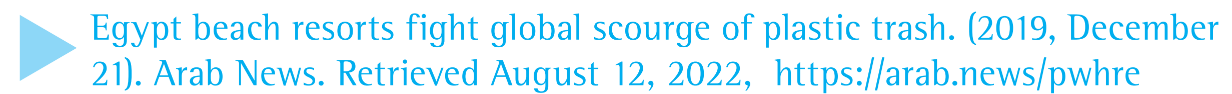
Quotes support your ideas and arguments. When you include a quote, you state where the quote came from and why you are using it. You can use sentence starters to share this information.

In the article ____(article title)____ it said ...	This shows that ...
According to ____(author's name)____ ...	This proves that ...
____(author's name)____ states ...	This illustrates ...

Citing sources

At the end of a research report, you list your sources on a Works Cited page. Because websites change, some online sources include a permalink to use as the cited web address. This is a permanent hyperlink, a highlighted word or picture you click on to take you to another web location. Look for a "share" or "cite this" button to find the permalink. You can ask your teacher for help to view one of these hyperlinks.

When you cite a source, you should use the following method:
Put the citations in alphabetical order by the author's last name or the title of the article, if there is no author. Then give the source, the date, and the URL.



Egypt beach resorts fight global scourge of plastic trash. (2019, December 21). Arab News. Retrieved August 12, 2022, https://arab.news/pwhre

For a YouTube video, use the uploader as the author, the date, the video title followed by the word "video", the site name, and the URL.



RTV, 2019. Very Nile video. YouTube, https://www.youtube.com/watch?v=yH5SVlgN_gY

Explore

With a partner, write a list of dos and don'ts for taking notes using online sources, including tips for paraphrasing and using quotes.

Review

1. How are paraphrasing and copyright law connected?
2. Do you think it's a good idea to copy and paste online content into your notes? Why or why not?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



Documenting information appropriately

Review the websites you selected in the last lesson. Take notes on the content that matches your topic and research questions. Write a paragraph about your topic. Create a "Works Cited" page for the websites you used in your research.

Comprehension

1 Think and answer

Review the "Works Cited" entries in the lesson. In what order does the information in the entries appear? How is the information in the entries ordered? Order the components from 1 to 7.

- ☐ date of publication
- ☐ title
- ☐ name of the publication
- ☐ database name
- ☐ author's name
- ☐ date of retrieval
- ☐ URL

Research

2 Take notes

Review the sources you selected in the last lesson. Take notes for the three best sources on the list.

Source #1

Domain and author(s) names: ______________________________

____

____

____

____

Source #2

Domain and author(s) names: ______________________________

____

____

____

____

Source #3

Domain and author(s) names: ______________________________

____

____

____

____

3 Write your paragraph

Use the space below to write your paragraph. Don't forget to paraphrase from your notes and use quotations if appropriate.

____

____

____

____

____

____

____

____

____

____

Issues and Challenges

4 Think and discuss

Studies show that students use someone else's content without permission at least once. Why do you think this happens? What problems might this cause for someone who uses other people's content on a regular basis?



Imagine a world where students only copy and paste other people's online content into their research papers. Would this affect students' learning? How? How might it affect the rest of their lives? How might it affect the world?

REVIEW Theme 2

Vocabulary

1 Write and compare

Write a sentence for each set of words to explain the connection between them. Then compare your sentences with a partner.

1. PII and phishing

____

2. harmful content and reliable resources

____

3. copyright and documentation

____

Review Questions

2 Read and answer

1. What is personal data?

____

2. List three ways to keep your personal information safe online.

____

3. What is an example of multi-factor authentication (MFA)?

____

4. What actions should you take if you think an online profile is fake?

____

5. Why would you include a quote in a research paper?

____

6. List two reasons for using multiple sources in your research.

____

7. How can you ensure that a search result is as accurate as possible?

____

8. How should paraphrased text differ from the author's original text?

____

____

Critical Thinking

3 Think and answer

1. The way that hackers try to steal PII will likely change over time. But what three essential pieces of advice for protecting PII would you give **now** to someone not familiar with the dangers?

   ____

   ____

2. How might a research report be affected if you use unreliable sources?

   ____

   ____

3. Many people believe "copying kills creativity." Do you agree that copying other people's work decreases creativity? Why or why not?

   ____

   ____

Essential Question

4 Think and complete

Think about the information you have learned in this theme. How does it help you understand how to protect yourself and your data online? Complete the sentence with your own ideas.

After studying this theme, I know that I can protect myself and my data when online because ______________________________

____

____

Activity

5 Research, create, and show

What do you need to do when you write a research paper that includes the words and ideas you find online? Create a flowchart to help you. Think about:

- using your own words and ideas
- how much of someone else's writing you can use
- paraphrasing, and why quotes might be used in your research.

Invite your classmates to view and test your flowchart.

PROJECT Term 1

1 **Read the title of the project carefully. Think about what you learned in Term 1 and how it will help you in your research and presentation.**

Share information about an important Egyptian archeological discovery.
As a group, research information about important Egyptian archeological discoveries. Choose a discovery that interests your group the most, write about it, and present the results to the class.

2 **Who are you working with? Which adult will you go to for help if needed? Explain your choice.**

- ______________________
- ______________________

3 **Brainstorming techniques**

How will you present your information? What kinds of device accessories might you need to use while preparing your presentation? For example: scanner, printer, storage device. Explain. What do you need to do to make your presentation a success?

____

____

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4 **Gather information**

What sources will you use to gather your information?

- Search engines ☐
- The Egyptian Knowledge Bank (EKB) ☐
- The school library ☐

What will you do to ensure you are searching safely and ethically?

____

____

____

____

____

Other: ______________________

Remember: When using search engines, you can use quotation marks and the Boolean search operators discussed on page 70.

5 Storing and organizing information

Think about what you've learned about computer networks, flash memory, and folders. How will you use what you learned in Term 1 to store and organize the information that you find?

Remember: Don't put everything on your desktop!

6 Our plan

Write down your plan for doing the project. Plan the steps. Remember: Include citing sources in your list of steps.

1

2

3

7 Our final product

Provide results of your research here. Don't forget to cite your sources! Example: I found this information on the Egyptian Knowledge Bank. It's in a book called *Tutankhamun's tomb discovered*, published by York Press.

8 Presenting our work to the class

How can we present the work? What will we say? What will we avoid doing?

NOTES

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المواصفات الفنية:

مقاس الكتاب:	١٩ × ٢٧ سم
طبع المتن:	٤ ألوان
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Information and Communication Technology

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